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A study by Management and Economic Research, Inc. (MERI) of the occupational education in a 2-county area analyzed employer and student needs and existing facilities. To reduce wasteful competition, it recommended a change from local to area planning and the organization of a Regional Occupational Center (ROC) System with subsystems in contiguous high school districts. Points to be considered were: (1) each school should continue to offer basic programs in agriculture, homemaking, industrial arts, and business; (2) vocational courses should be given in clusters; (3) for operating ease, the 2-county area should be divided into ROC subsystems, and (4) some courses, because of small enrollment or costly equipment, should be offered only at the junior college, from which ROC could contract for the training under appropriate arrangements. Special ethnic interests and adult needs must be met throughout the system, as well as the change from a predominantly agricultural to a light industrial employment market. Particulars of employer and student needs have been examined and the data incorporated in the basic organization of the ROC system. To support the various ROC classes, three special committees are needed: (1) to coordinate regional work experience and further the development or addition of certain training slots; (2) to articulate pre-technical and technical programs, and junior college and high school programs, and (3) to study the continuing impact of the Miller Act of 1968. Details of eight vocational programs are given. (HH)

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SUMMARY REPORT OF A STUDY TO ASSIST IN THE DEVELOPMENT OF A REGIONAL OCCUPATIONAL CENTER SYSTEM IN TULARE AND KINGS COUNTIES

Prepared for

THE COUNTY SUPERINTENDENTS OF SCHOOLS
IN TULARE AND KINGS COUNTIES
and
THE JOINT COUNTIES VOCATIONAL ADVISORY COMMITTEE

IC 680 459

Management & Economics
RESEARCH INCORPORATED

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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Prepared for

The County Superintendents of Schools
in Tulare and Kings Counties
and
The Joint Counties Vocational Advisory Committee

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PREFACE

This study is the result of the joint concern of educators and employers in Tulare and Kings counties. Their combined effort to foster and improve vocational education led to the initiation and funding of this project. Financial contributions were made by the two county superintendents of schools offices, most of the high school districts, and the College of the Sequoias. In addition, the following local employers and labor organizations contributed financially to this study:

Beacon Oil Company, Hanford
Houck Industries, Tulare
Nashua Manufacturing Company, Tulare
Retail Clerks Union, Local 1288, Fresno
Tulare-Kings County Building and Construction Trades Labor Council, Visalia
Western Milk Transport, Incorporated, Tulare

The support given to this study by educators, employers, union officials, and members of various public and private agencies in the community who were contacted by MERI demonstrated a general awareness of the complex problems that are concomitant with providing effective occupational education. Furthermore, such support is indicative of the cooperative spirit required to implement difficult but necessary changes in the present educational system.

This report contains MERI's recommendations for the development of a Regional Occupational Center System and a summary of relevant research findings. At the request of school officials, much of the supporting documentation was not included in the body of this report. However, all working papers used in the gathering and analysis of data used by MERI to develop its recommendations have been turned over to the Tulare County superintendent of schools. These papers include all completed questionnaires from students, school personnel, and employers.

Appreciation is expressed to the many school administrators, instructors, counselors, and work experience coordinators who cooperated during the collection of information essential to this study. Also, appreciation is expressed to the businessmen, the directors and staff of public and private agencies, and the representatives of associations within and outside of the counties who cooperated with the MERI staff during interviews and extensive correspondence. All were most gracious in providing time, information, advice, and candid viewpoints.

Special acknowledgment is extended to Mr. Earl D. Cornwell, Director of ADAPT, for the financial assistance his organization gave toward off-setting the costs of having the high school graduate follow-up questionnaires processed on electronic data processing equipment.

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I THE PROBLEM

> "We are now at the point where we must educate people in what nobody knew yesterday, and prepare in our schools for what no one knows yet, but what some people must know tomorrow."
>
> Margaret Mead

In the lifetime of many citizens in Tulare and Kings counties, man has pushed through two major time barriers--past the speed of the horse and past the speed of sound. The limitation of the "horse barrier" is recorded in 5,000 years of man's writings. But after that barrier was finally broken, it took less than 50 years to break the sonic barrier.

Time has been compressed for man so that major changes which formerly took centuries now rush in on him pell-mell. Children nonchalantly tune color television sets to capture signals bounced from space satellites; their parents were excited with dial telephones. High school students now train to use electronic computers; their parents may have never traveled the keys of a mechanical adding machine. College engineering students are using the laser as a survey instrument; many high school science teachers do not even understand the principles on which it operates. Young medical students for whom organ transplants will be commonplace are joining older colleagues who still remember the peg leg.

As the technical world advances at an ever faster rate, the problems of educating youth to enter the world of work become increasingly difficult--not because our youth are resisting the changes, they are in fact embracing them, but because our traditional educational systems resist changing to meet society's changing needs.

In no phase of education is the problem of adjustment to change more critical than in occupational education. Recognizing this, the county superintendents of Tulare and Kings counties, in concert with the high school districts, the College of the Sequoias, and various

local commercial organizations, contracted with Management & Economics Research Incorporated (MERI) to organize a study of the occupational education effort in the local schools. This summary report, supported by more detailed work papers delivered to the Tulare County superintendent, gives the results of that study.

The study called for an analysis of:

- Employer needs related to occupational education
- Student needs related to occupational education
- Existing occupational programs and facilities

Out of this analysis have come a series of recommendations related to needed occupational curricula and a system which will encourage joint action and cooperation in educational planning and implementation. The recommendations call for a change in emphasis from local to regional planning so that students, employers, and the community-at-large may reap a greater gain from their investment of time, effort, and money.

II THE BASIC RECOMMENDATION

School districts have been traditionally organized in such a way as to diminish rather than increase mutual cooperation. They compete within given areas for the tax dollar. They compete for staff and for jobs for their students. They jealously guard their local autonomy; therefore, except for athletic scheduling, they seldom come together for cooperative action.

The central thrust of MERI's recommendation is that, to counteract this fragmented effort, the various districts organize themselves into a Regional Occupational Center (ROC) System for the purpose of evolving, funding, and directing cooperative programs in occupational education. Such an action would generate additional cooperative efforts among the districts which could only further benefit the region.

For a great many concerned citizens and educators, the most obvious solution to occupational education problems is the building of a technical high school to which all students wishing occupational training might come. MERI rejects this solution for the Tulare/Kings area on three grounds:

1. Historically such schools in America have become dumping grounds for "second-class" student citizens.

2. The net effect of such schools has been to reduce rather than to increase occupational education in the districts served. (Relieved of the responsibility, the "comprehensive" schools have quickly become "academic," giving up their occupational program responsibilities.)

3. Far broader changes are required in the local schools than the mere inclusion of a few new vocational programs--and MERI believes that such changes are more likely to occur if the existing school staffs have the stimulus of a changing occupational program under the same roof with them.

MERI recommends that instead of separating education into two parts--the vocational and the academic--the districts recognize that there is a decreasing job market for 18-year-olds, no matter how specific their training. The high school educational responsibility is therefore decreasingly vocational--that is, training in specific basic skills for an entry job in a chosen career. Instead, educational emphasis is increasingly broadened so that a student is allowed to sample a variety of occupational experiences and to learn a cluster of skills which will give him flexibility to move about in the career world as the technology changes.

With appropriate occupational exploration done in the high school, the student can get his entry skills training at the junior college. Thus the student will have had a richer occupational experience as the basis for his first serious career choice, and society will receive more mature and more broadly educated young workers. For the majority of students in the district, this pattern will become increasingly familiar, and the districts ought to capitalize on it through cooperative effort.

To capitalize on existing local programs and needs, the following approach seems appropriate.

1. Each high school should continue to offer basic or general education programs in Agriculture, Business, Homemaking, and Industrial Arts. These programs are not now truly vocational; however, they do prepare a student for later enrollment in job skills courses which lead directly to job entry. In addition, these programs are good general education programs preparing students for life, even though the students do not pursue careers in the field. Each school should offer as many of these types of curricula as possible and encourage <u>all</u> students to participate in such occupational exploration as a part of the counseling and guidance program.

2. The truly vocational programs should be planned around occupational family skill clusters without regard to the traditional four

areas of vocational education. This planning should take place under the direction of the ROC System, which hopefully will include all high school districts in the two-county area. The ROC System should establish five sub-systems of geographically contiguous high school districts. Programs should be allocated to these sub-systems so that a single program could serve all high schools in the sub-system where appropriate. Students should be bussed if necessary from their home school to the school offering the particular program in which they are interested, returning to their home school for the rest of their studies.

Not all vocational programs should be offered at a single school within the sub-system. Figure 1 illustrates the concept. Obviously such interschool scheduling requires that the students have significant blocks of time available to make the transferring efficient. Further, the interschool schedules must be compatible. Scheduling would be a first priority problem for the participating districts.

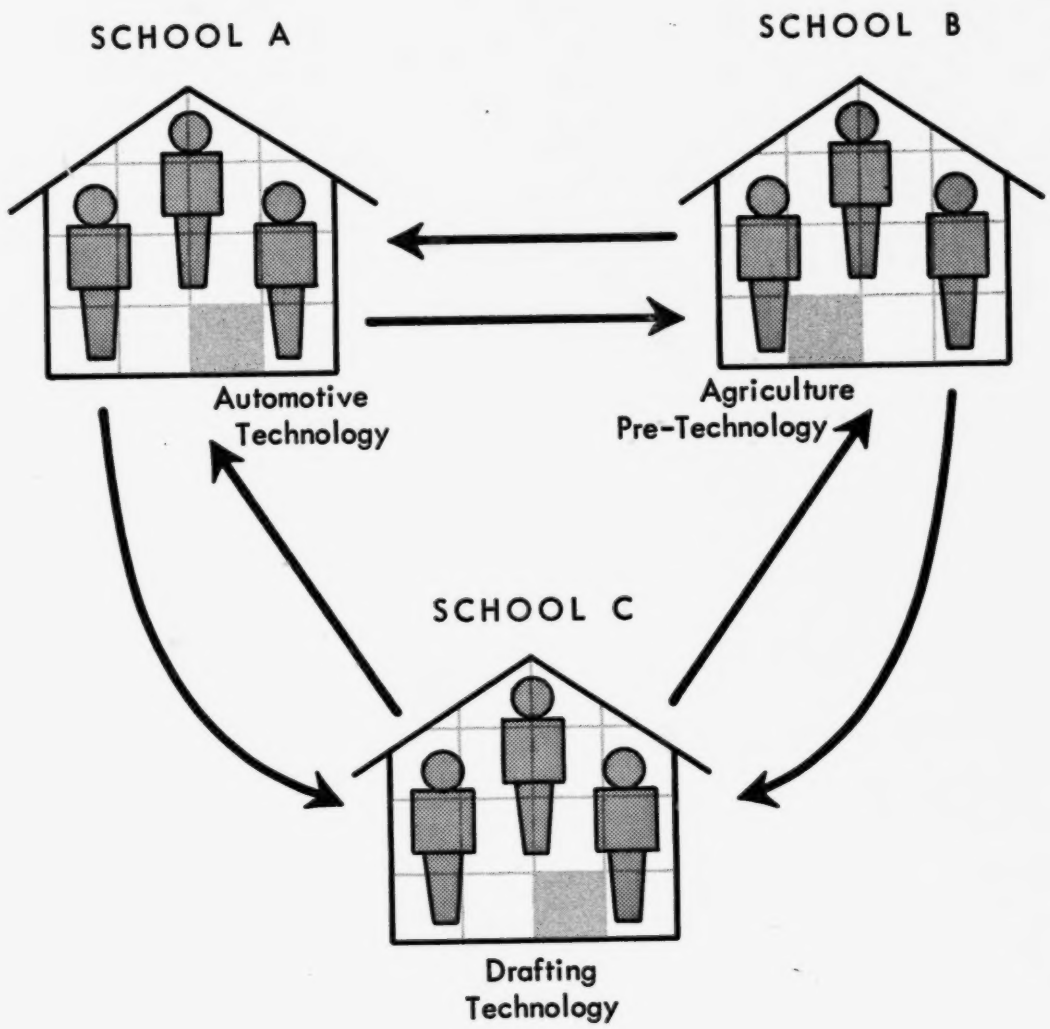
Certain programs might not be offered in all sub-systems, in which case students could be bussed between sub-systems. For example, programs in electronics might be offered in only three of the five sub-systems with the students from the two sub-systems lacking the program being bussed to one of the three sub-systems offering the program.

3. Because sharing programs means bussing students from one school to another for part of a day, the proximity of various schools is an important consideration. The schools of the two-county area tend to be drawn into five groups when both road network and community orientation are considered. Therefore, MERI recommends that for purposes of organization and scheduling, the two-county districts be divided into the following five ROC sub-systems:

Sub-system I - Lindsay-Strathmore-Porterville
Sub-system II - Tulare-Corcoran-Alpaugh
Sub-system III - Visalia-Exeter-Woodlake
Sub-system IV - Hanford-Lemoore-Avenal
Sub-system V - Dinuba-Orosi

Figure 1

TYPICAL TRANSFER OF STUDENTS INTO SHARED PROGRAMS BETWEEN SCHOOLS IN A ROC SUB-SYSTEM



This suggested division of school districts into ROC sub-systems may require further consideration and adjustment because of changes in enrollment and curriculum patterns; however, it can be used as a basis for planning until other groupings prove to be more advantageous. For example, grouping Avenal with Coalinga High School and Coalinga Junior College is a possibility. Even though such a grouping crosses yet another county line, MERI recommends that early steps be taken to arrange joint programming for Avenal students at Coalinga.

Similarly, Dinuba and Orosi have their major orientation toward Reedley College rather than the College of the Sequoias. MERI recommends that the possibility of joint programming be pursued here also. There might also be programming advantages for Hanford and Lemoore students if these two schools merged portions of their educational programs with Riverdale and Laton to the north.1/

4. Some vocational programs would be offered only on a centralized basis, either because of anticipated limited enrollments, or because of the high cost of equipment and facilities. Where this would be the case, such programs should be offered by the junior college; the ROC System should contract for such training services from the junior college district. Under Section 6401 and 6403 of the Education Code, 11th and 12th grade students can attend programs at the junior college level with the local high school receiving full Average Daily Attendance (ADA) credit for the basic educational instruction, and the junior college obtaining ADA credit for a special part-time student. This program should be administered through the ROC System so that control is maintained by the high school districts.

MERI recommends that all vocational programs offered under the ROC System be provided on existing campuses, at least in the beginning.

1/ Because MERI is recommending a similar ROC System for Fresno County, the possibility of joint planning among the three counties for truly regional planning is greatly enhanced.

This approach avoids the creation of any "centers" in the sense of the construction or use of a physical center separate from the existing school facilities available in the community. Designated ROC programs should be under the control of the ROC System which can contract services from individual school districts. Each school district that is not a part of the ROC System should pay tuition to the ROC System for its students attending the programs.

III ESSENTIAL BACKGROUND INFORMATION

Any realistic study of the educational needs of Tulare/Kings counties must consider the unique characteristics of the communities of the area and of the students of those communities. Continuous program planning must also reflect the needs of the broader community, the state, and the nation, especially when, as here, significant numbers of young people leave the area to find their fortunes elsewhere. These community characteristics of importance in educational planning for Tulare/Kings counties are discussed here and in Chapters IV and V.

Population Trends

Knowing certain population characteristics will help the educational decision-makers in the area determine the programs most needed and appropriate sites for those programs.

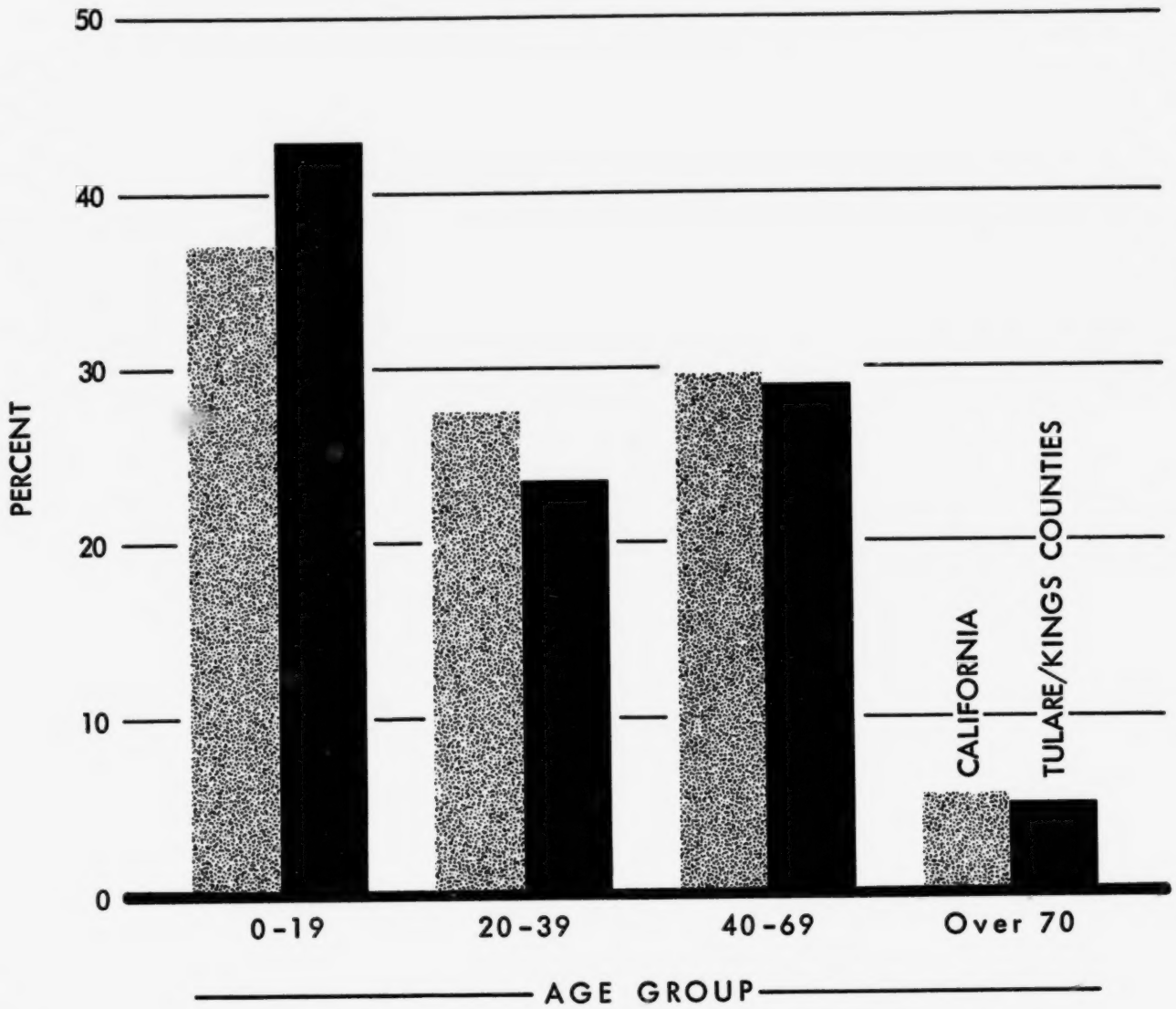
Tulare/Kings counties are growing at a rate slightly below that for California but slightly above that for the total San Joaquin Valley. The two counties should have a total population of 302,000 persons by 1975, with the Tulare County population remaining three times as large as that of Kings County.

With the decline of family farms and low skill agricultural labor needs, increasing number of ruralites are becoming urbanites, moving to cities outside the valley as well as to local population centers. The outcome of this migration trend has been a net loss of the counties' young adults between the ages of 20 and 40.

This loss is reflected in the age structure of the population in the two counties wherein the proportion of youths under 19 years of age is 6 percent higher than that of the state as a whole and the proportion of persons between the ages of 20 and 40 is 4 percent lower than that of the state as a whole. Above the age of 40 the difference between the age structure of the two-county populations and that of the state is negligible. (See Figure 2.)

Figure 2

COMPARISON OF POPULATION AGE STRUCTURE IN
TULARE/KINGS COUNTIES AND STATE OF CALIFORNIA



NOTE: Percentages rounded to nearest tenth.

SOURCE: California Department of Finance, April 1967.

The Tulare/Kings counties educational system can recognize and plan for the special needs of students arising out of the outward flow of young people. There are two chief ways in which this can be done.

1. The educational system can cooperate with the industrial development agency of the area to develop the local employment base by attracting additional employers to the area. This can best be done through providing a responsive and flexible training system which will aid local employers in filling their manpower requirements.

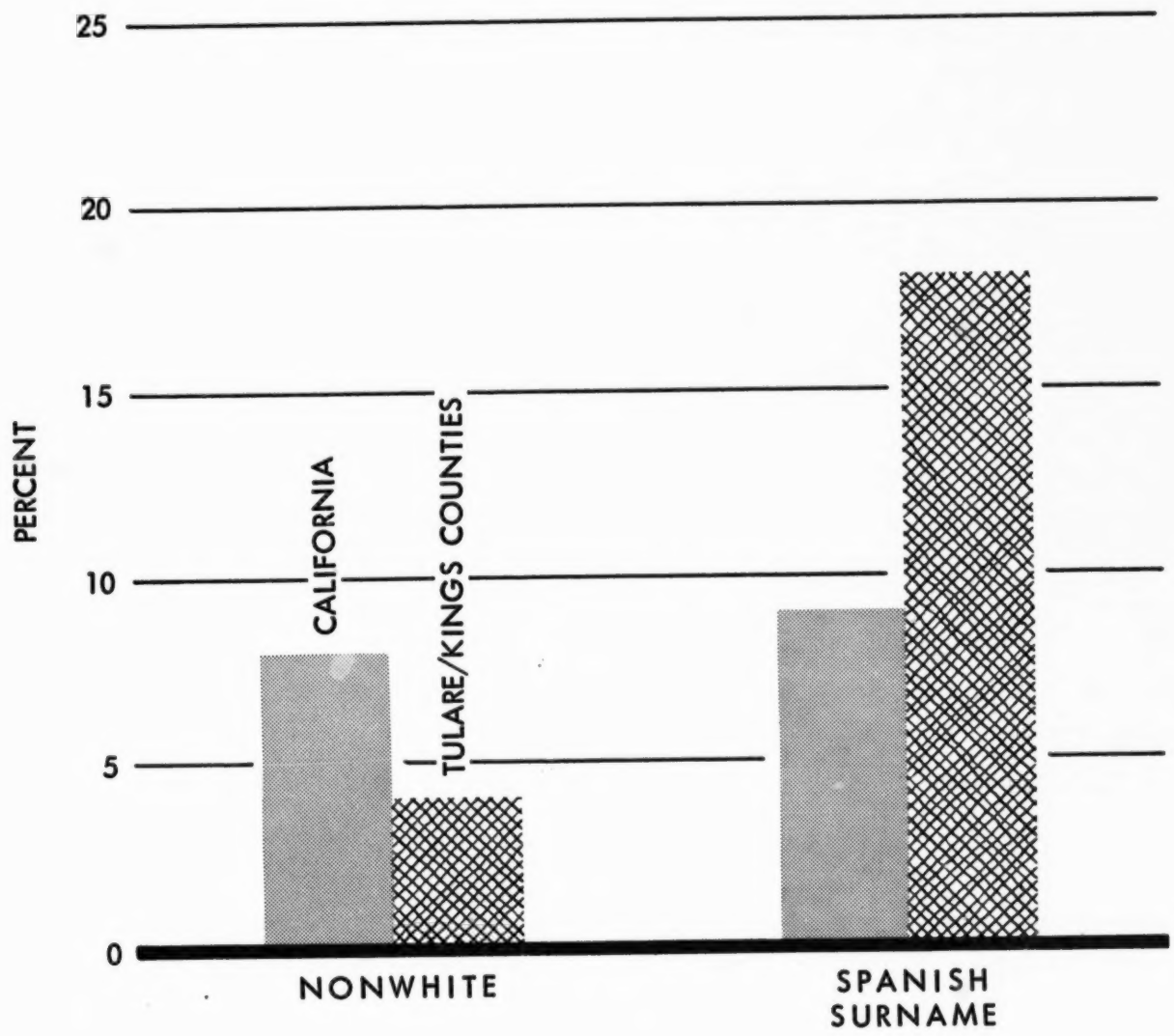
2. The educational system must prepare students for the world of work beyond the borders of Tulare/Kings counties. Skills needed in the urban centers must be taught to students in the rural centers so that they can be economically independent when they go to the city.

Special ethnic interests and needs must be another concern of local educational leaders in restructuring occupational programs. According to the 1960 census, the proportion of the nonwhite population in the two-county area was only about half of the state; however, the proportion of Spanish-surname residents was double that of the state. (See Figure 3.)

The large contingency of Spanish-surname persons residing in the Tulare/Kings area is reflected in school enrollments. Some school districts report as high as 50 percent of their enrollments are comprised of students bearing Spanish surnames. If it is assumed that standard English is a barrier to learning for many of these youths (or adults who might be students), then drastic reorganization of some of the academic subjects may be called for to launch an effective occupational program. Further, if it is assumed that minority members of the local area have the same difficulties penetrating the job market that are reported elsewhere, then the Tulare/Kings schools should take joint steps to resolve this occupational problem.

Figure 3

COMPARISON OF NONWHITE AND SPANISH-SURNAME POPULATIONS IN TULARE/KINGS COUNTIES AND STATE OF CALIFORNIA



NOTE: Percentages rounded to nearest tenth.

SOURCE: U.S. Department of Commerce, Bureau of the Census.

Employment Trends

The Tulare/Kings area yields intensive agricultural production, an increasing portion of it coming from large corporate farms. Indications are that agricultural activities will remain the key economic element in the area for the foreseeable future. However, two major trends will affect the educational program.

The first trend is the growth of farm size. The family-size farms are decreasing in number while corporate farms are growing both in size and in number. Between 1950 and 1960, the number of farms in the San Joaquin Valley declined by nearly 15 percent; at the same time, farm acreage was actually increasing.

The second trend is the rapid increase in mechanization and technology in crop production, reducing but not eliminating the need for unskilled hand labor. Despite the increasing production level, the agricultural work force is now expected to remain at about the same level during the next decade, even though it declined by 7 percent during the last decade. Obviously changes are called for in what has been excellent agricultural education in the past.

The development of light industry in the Tulare/Kings area has offered new employment opportunities. The printing industry alone now employs over 500 persons. Two electronics firms have established plants in the area employing 400 persons. Other newly established light industries have added 300 jobs to the local job market. Armstrong Rubber Company near Hanford expects to employ 1,000 persons when it reaches capacity production. This trend of light industry development will continue.

The entry job level requirement for such light industry employment is usually the high school diploma; yet the local educational median for adults over 25 years old is about nine and one-half years of schooling. Therefore, an occupational education system that is devised to meet employment needs in the community must assist not only the youths but also the adults to prepare them for changing employment requirements. For

example, the large contingent of Mexican-Americans residing in Tulare/Kings counties contributes to a colorful and diversified culture, but also poses a variety of educational challenges. Many of the Mexican-American adults face language barriers which limit their effectiveness in obtaining and maintaining full-time stable employment. Educational attainment among the Mexican-American population is generally below that of the rest of the population. Many Mexican-Americans have only limited job experience, training, or skills outside of the field of agriculture. These elements, combined with other cultural and social factors, pose special difficulties for schools in providing Mexican-Americans with adequate basic education as well as occupational education which is compatible with their interests, skills, and aptitudes.

In the Tulare/Kings area, service industries have shown the fastest rate of growth in employment. Personal services, business services, and medical services lead the field. The Tulare County Area Planning Commission estimates that by 1970, 30.5 percent of the total county labor force will be in service occupations (versus 25.7 percent in 1960). Part of the anticipated growth will be in serving the tourist industry resulting from the Disney Corporation's Mineral King development; however, this project will not open a significant number of <u>new</u> jobs in the area, according to Disney Corporation executives.

Other significant changes are the decline of employment in the Kings County petroleum industry and the growth of civilian clerical and maintenance positions at Lemoore Naval Air Station. Such changing employment patterns require that the area school districts re-examine their educational programs for relevance to the world of work that their students must face.

The Schools

An examination of Table 1 shows that the two-county area presents a range of school district enrollment sizes from about 50 students in Alpaugh to nearly 3,500 students in Visalia. Not only do the school districts vary widely in size but they also vary widely in other characteristics. Table 2 summarizes these variations.

Table 1

HIGH SCHOOL DISTRICTS AND APPROXIMATE NUMBER OF DAY STUDENTS, TULARE/KINGS COUNTIES 1967-68

Tulare County Districts	Name of High School(s)	Approximate Enrollments 1967-68
Alpaugh Unified School	Alpaugh High School	55
Cutler-Orosi Unified School	Orosi High School	620
Dinuba Joint Union High School	Dinuba High School	880
Exeter Union High School	Exeter High School	775
Lindsay Unified School	Lindsay High School	560
Porterville Union High School	Porterville High School Monache High School Johnsondale High School	2,795
Strathmore Union High School	Strathmore High School	305
Tulare Union High School	Tulare Union High School Tulare Western High School	2,575
Visalia Unified	Mount Whitney High School Redwood High School	3,475
Woodlake Union High School	Woodlake High School	520
Kings County Districts		
Corcoran Unified	Corcoran High School	850
Hanford Joint Union High School	Hanford High School (East and West Campuses)	2,200
Lemoore Union High School	Avenal High School Lemoore High School	1,100

Source: "October Reports." Tulare/Kings County Superintendents of Schools Offices.

Table 2

SUMMARY OF SCHOOL AND STUDENT CHARACTERISTICS OF SELECTED HIGH SCHOOLS, TULARE/KINGS COUNTIES[1/]

	Tulare County Schools								Kings County Schools		
	Orosi	Dinuba	Exeter	Porterville	Tulare Union	Tulare Western	Mount Whitney	Woodlake	Corcoran	Hanford	Lemoore
Year of last accreditation	1965	1965	1966	1966	1967	1964	1966	1967	1967	1965	1964
Approximate population served by school	13,000	25,000	10,500	35,000	18,200	--	39,000	8,200	10,500	12,000	12,000
Number of students transported by school bus	312	285	317	885	785	--	320	208	80	630	575
Percent of students transported	60.0%	35.0%	41.5%	35.5%	49.0%	--	20.0%	40.0%	10.0%	31.0%	63.0%
Approximate percent of graduates entering college	44.0%	55.0%	50.0%	40.0%	44.0%	41.0%	54.0%	40.0%	--	48.0%	46.0%
Median academic potential of secondary students	98.0%	105.5%	105.0%	101.8%	93.0%	96.0%	103.6%	96.8%	91.0%	--	--
Number of credentialed school personnel, including administrators	26	44	42	122	83	47	77	26	45	99	48
Number of provisional teaching credentials	3	6	4	17	2	7	0	3	3	23	8
Number of counselors (Full-time equivalent)	0.4	2.0	2.3	7.0	4.7	1.7	5.6	1.6	2.0	5.5	2.0
Number of teachers in:											
Agriculture	1.1	1.0	3.0	3.0	3.0	--	3.0	1.0	2.0	4.0	2.0
Business Education	2.6	4.3	3.3	11.0	7.0	--	6.0	2.0	3.0	7.0	4.0
Home Economics	1.0	2.0	1.6	4.0	3.0	--	2.0	1.0	2.0	4.0	2.0
Industrial Arts	4.0	3.0	3.6	8.0	7.0	--	4.2	3.0	3.0	8.0	4.0
Total (Full-time equivalent)	8.7	10.3	11.5	26.0	20.0	--	15.2	7.0	10.0	23.0	12.0

1/ Data shown in this table were taken from reports for the last year of accreditation at each school.

Although the region served is large, the road network is good. Transporting students between neighboring schools for the sharing of certain common programs would not cause undue hardships, particularly if buses were arranged as travelling study halls with audio equipment and writing surfaces.

IV EMPLOYER AND STUDENT NEEDS

Employer Needs

That a new kind of educational effort is required is evidenced by both employer and student needs. During interviews conducted by MERI, employers in the Tulare/Kings counties uniformly expressed educational needs in terms of basic subjects, including communication skills, mathematical skills, and personal characteristics. Those specific needs most frequently mentioned included:

- Ability to read, understand, and follow simple written directions.
- Ability to prepare simple written reports, e.g., work orders and shipping instructions.
- Ability to perform simple mathematical calculations, e.g., ability to calculate price of an individual item when pricing is in multiple terms.
- Ability to meet and deal pleasantly with customers.
- Ability of a job seeker to "sell himself" when applying for a job.

Additionally, employers in significant numbers mentioned what they perceived to be a need for additional training in basic economics, especially the economics of profit and loss. There was general concern for a lack of perception of the way in which wages were related to productivity. Employers asked for "basic economic training." When this is translated into the total context of expressed employer needs, it might better be labeled "work attitudes." Recent graduates are frequently not motivated by the same factors that spur the entrepreneur on to better performance. Employers believe the educational system should give students a more realistic conception of the world of work.

Several employers mentioned specific skill training which they believed should be offered by the public schools. Those areas most frequently mentioned were:

- Electronics and/or electricity
- Machinist
- Supervisory skills
- Drafting
- Data Processing
- Salesmanship
- Maintenance mechanics
- Automotive mechanics (especially diesel)
- Construction
- Lithography
- Accounting

Many employers expressed their belief that existing training programs were doing a good job in preparing clerks, typists, and stenographers. Weaknesses in these programs centered around basic skill inadequacies such as spelling and mathematics.

The needs of employers in Tulare/Kings counties are only part of the employment picture necessary for adequate occupational program planning. Regional, statewide, and national trends must also be a part of the planning base. The reason for this becomes obvious when the mobility of the work force is considered. Labor shortages and surpluses in the San Joaquin Valley as reported by the California State Department of Employment are shown in Table 3. It is noteworthy that most shortages are in occupations requiring highly qualified persons with specialized skills, and most surpluses are in occupations using marginally qualified workers with limited skills or poor work records.

Employers interviewed by MERI commented frequently on the lack of skill training, the lack of general education or literacy, and the poor worker attitudes of young workers from the local school systems.

Table 3

LABOR SHORTAGES AND SURPLUSES IN THE SAN JOAQUIN VALLEY

Shortages	Surpluses
Registered nurse	General clerical worker
Licensed vocational nurse	Cashier
X-Ray technologist	Building trades worker
Medical laboratory technologist	Retail salesman
Secretary	Maintenance mechanic
Bookkeeper[1/]	Welder[2/]
Clerk-typist[1/]	Service station attendant
Cosmetologist	Truck driver
Live-in maid	Janitor
Shirt presser	Cook[3/]
Automobile mechanic[1/]	Waitress[3/]
Auto-body repairman	Sewing machine operator[3/]
Color television repairman	
Diesel mechanic	
Machinist[1/]	
Tool and die maker	
Office machine repairman	
Draftsman	
Insurance salesman	

1/ Highly qualified personnel only.
2/ Some shortage of combination welders.
3/ Seasonal fluctuations caused these occupations to appear as both surplus and shortage occupations.

Source: California State Department of Employment, 1967.

Student Needs

Although the ROC System should obviously serve the needs of the area's adult population where it can, of prime importance is meeting the needs of the high school age youth. MERI interviewed students presently enrolled in the high schools and one group of former drop-outs presently enrolled in Continuation School and Neighborhood Youth Corps. In addition, with the assistance of the local districts, MERI initiated a follow-up study of local high school graduates.

The following subsections summarize the principal findings in each of these surveys.

In-School Youths. One hundred twenty-one students from six high schools completed questionnaires prepared by MERI. Interviews were conducted with these same students. The highlights of this survey were:

1. One hundred thirteen of the in-school youths interviewed had specific occupational goals.
2. Of the students stating they had occupational goals, those who were "college-oriented" seriously discussed their plans with (1) parents, (2) counselors, and (3) friends.
3. "Non-college oriented" students tended to discuss their occupational plans with (1) parents, (2) friends, and (3) other persons outside of the school system.
4. The majority of in-school students interviewed expected to leave the local area soon after high school graduation. The reasons most often cited were: (1) to attend college and (2) lack of employment opportunities in the local area.

Continuation School and Neighborhood Youth Corps. Questionnaires were completed by students, and group discussions were held with 31 youths during an Alternate Opportunity Conference held at the SCICON camp in May 1968. Key findings of this meeting were:

1. Thirty out of the 31 youths indicated that they had been turned down for a job they seriously wanted. The reasons given by employers were: (1) applicants were too young, (2) lack of high school diploma, and (3) no help needed at the time youths applied for job.

2. The majority of youths had taken "shop courses" when they were enrolled in regular high school. On the whole, these youths preferred shop courses over "academic" classes because they believed they were learning something useful in shop courses. Many of the youths mentioned disappointment at the lack of shop courses in the Continuation Schools they attended.

3. There was general agreement among the group that Continuation School was, for them, better than regular high school because classes were smaller, and because teachers gave more individual instruction and listened to their problems. Above all, the group appreciated the "adult treatment" they were given by their teachers in Continuation School.

Graduate Follow-Up Study. Over 700 former high school graduates from the local high schools returned questionnaires that were mailed to them. Ninety-seven percent of the respondents were from graduating classes between 1962 and 1965. The following is a summary of their responses:

1. Fifty-three percent of the respondents no longer lived in Tulare or Kings counties.

2. Forty-one percent lived in other California cities.

3. Nearly 75 percent of all respondents had taken one or more semesters in some college or junior college.

4. Sixty-five percent of the respondents took their first full-time job in either Tulare or Kings counties.

5. At the time of the survey:

   17% were employed in "business-related" occupations;
   16% were employed in "service-related" occupations;
    7% were employed in agricultural jobs;
    6% were employed in medical services and specialties.

6. At the time of the survey:

   48% were employed full-time for six months or longer;
   20% had served or were presently serving in a branch of the Armed Forces;
    1% of the males and 7% of the females had been unemployed for six months or more.

7. Respondents mentioned the following courses taken in high school as the most beneficial to them, in order of frequency:

   Typing
   General Business
   Mathematics
   Office Practice
   Shorthand, Science, and Bookkeeping
   English

8. Respondents mentioned the following courses that they wish they had taken in high school, in order of frequency:

   General Business
   Shorthand
   Typing
   Mathematics
   Bookkeeping
   Science

Information collected by MERI in the follow-up study can serve as a baseline for future studies; however, some selected student comments are worth noting.

> "For many students who graduated from _____ High School, their formal 'education' ignored many things . . . essential to being well equipped in our society. To be specific, adequate sex education; adequate training in personal finance and money management. College was presented as 'the answer.' The stigma of not going to college forced a lot of people to take a college preparatory course they were not suited to take. Do you know what a person who can decorate department store windows, silk screen, or press clothes properly at the cleaners makes an hour? A lot more than many college prep students are making today."

\- - -

> "I feel that even a college prep student should take a few skill courses. If I had not done this against my counselor's wishes, I would not have gotten the jobs I have had and had to have to put myself through college as I am now doing."

\- - -

> "The courses I took in school were bits and pieces of all majors. It is hard to say which courses I wish I had taken in high school because today I'm still not satisfied with what I am doing as an individual."

\- - -

\- - -

> "I think my high school counselor pushed college prep courses on to me--which really hasn't helped much. I would have taken more general business courses if I had been able to express myself better to my counselor."

\- - -

> "The training I got in my business course did not help me at all in the job I got. The things they teach you at school and the way your employer wants things done are two different ways entirely. Also, the employer stresses the point that, 'That was at school, you do it this way here.'"

\- - -

> "If the high school could change the opinion that Industrial Arts, for example, is for 'dummies,' it would help a lot of people who want and need this kind of work <u>and</u> <u>love</u> <u>it</u>!"

"You had better improve your counseling center. The help that I was given when I was attending high school was as good as nothing."

- - -

"After being in college I have heard several students complain because they did not take woodwork, metal shop, electricity classes or Industrial Arts classes in high school. Instead they specialized in only a certain field and they now regret it."

- - -

"I would like to see the shop courses oriented towards students who want to learn rather than those who don't."

- - -

"It was all there if a person wanted to apply himself."

- - -

"Classes should be geared more to problem solving techniques rather than presentation of facts and testing memory."

- - -

"When I graduated, I was trained for absolutely no vocation; I knew the only course available to me was to continue on in school to pursue some kind of vocational training."

- - -

"High schools should offer business courses that are more like real office training and conditions. Work experience helps a lot--shows you what you actually don't know about jobs. Work experience should be for juniors, not just seniors. When you get to be a senior, it is too late for experience. Then you actually have to find a job or else degenerate."

- - -

"When applying for jobs you have to have experience before you are hired. How can welding, etc., help you find a job if school training isn't accepted as experience? You might have high grades in the field, yet how do you get experience if no one will hire you?"

- - -

"I feel that more business courses should be required. Too many young people feel that they will go into farming or follow their fathers in their work. This is a new world and business courses are a must."

V AVAILABLE CLASSROOM FACILITIES FOR OCCUPATIONAL EDUCATION

Joint use of existing school facilities can be a real economy to participating districts. MERI examined local schedules, enrollments, and occupational education facilities to determine if districts could, in fact, accept additional enrollments in their training programs. The answer is affirmative in the main. Although scheduling problems prevent 100 percent utilization of classroom facilities, 80 to 85 percent utilization is attainable in large programs.

There was a positive correlation between the size of the school and the utilization made of available student stations in both counties. In general, utilization of all specially equipped facilities for primary functions was higher in the larger high schools than in the smaller high schools. Appendix A contains a summary of the existing vocational/occupational programs and courses offered in the high schools of Tulare/Kings counties.

Utilization of Potential Student Station Capacity in Tulare County

Available data indicated that in automotive, metals, and wood shops, over 50 percent of the student station capacity was being used for its primary function. In agricultural shops, this figure dropped to 41 percent. Data were available from one school (Porterville High School) on an Ornamental Horticulture program that was utilized at 54 percent of its student capacity. (The utilization of the only other reported Ornamental Horticulture facility could not be computed because of a lack of information regarding student capacity in the program.)

Other specially equipped facilities were generally utilized at the following levels: typing rooms, 69 percent; office practice and stenographic laboratories, 44 percent; mechanical drawing classrooms, 46 percent; and others (i.e., electricity-electronics, photography-printing, and commercial-graphic arts), 54 percent.

Utilization of Potential Student Station Capacity in Kings County

On a countywide basis, automotive and agricultural shops were used at 53 percent of their student capacities. Metal shops were used at only about one-third of their potential capacity, while wood shops were used at nearly two-thirds of their capacity. The only Ornamental Horticulture facility in Kings County (Hanford High School) was used to 69 percent of its present student capacity.

Additional utilization figures were: typing rooms, 50 percent; clerical-stenographic laboratories, 36 percent; mechanical drawing rooms, 45 percent; and others, 36 percent.

As in Tulare County, the larger high schools in Kings County generally utilized a higher percent of the available student stations in specially equipped facilities. This was particularly true in shop and business education facilities, but not in mechanical drawing rooms.

An overview of student station utilization in all high schools, at least in those courses that fit the primary function of the facilities, indicates that, with few exceptions, better utilization could be achieved without any major changes in scheduling patterns; that is, without extending the number of periods per school day or in increasing the number of student stations in the existing facilities. There are some notable exceptions to this, of course, in certain high schools. For example, Orosi High School is desperately pressed for space in its combined metal and agricultural shops, and the wood shop facilities at Lindsay High School are inadequate in terms of space.

The overall picture for joint use of facilities, however, is favorable. In fact, MERI's recommendation for cooperative offering of programs in the ROC sub-system will permit better utilization of existing occupational facilities.

VI BASIC ORGANIZATION FOR A ROC SYSTEM

If a significant change in vocational education is to be made in the two-county area, the local districts will have to band together for common programming and funding. Recognizing that local autonomy is a vital force in American education, MERI recommends a structure that offers the local district a voice in the planning, programming, and funding. The recommended organizational pattern is shown in Figure 4.

The Board of Management

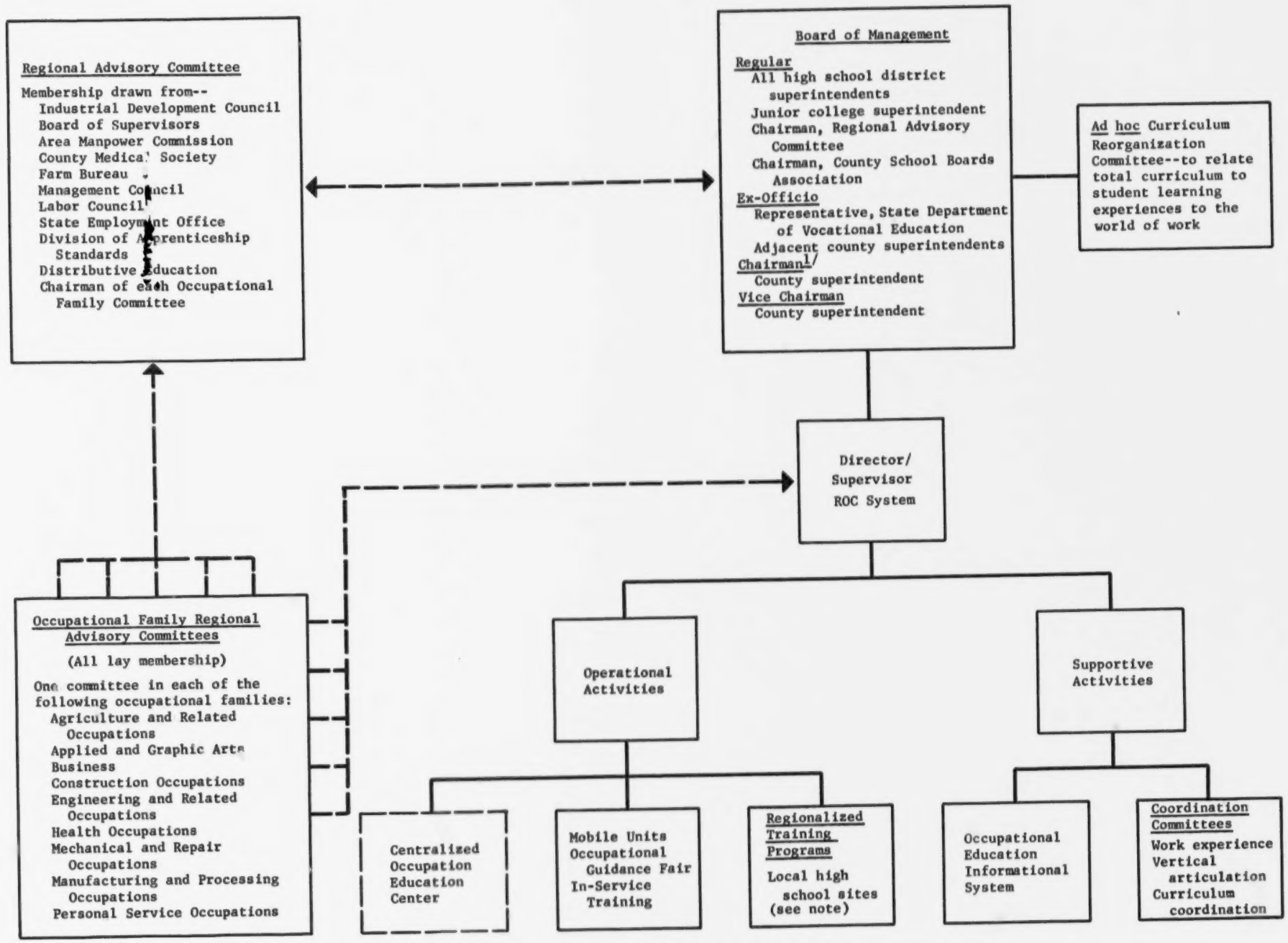
Key to this structure is a two-county Board of Management, the majority of whose members are the superintendents of the local high school districts. It is recommended that either the Tulare County superintendent or the Kings County superintendent be appointed chairman, and that the one not appointed chairman be appointed vice chairman. The determination of who will serve in which position and the length of time he will serve should be determined by the Board of Management. Other voting members should include the superintendent of the College of the Sequoias, the chairman of the two-county Citizens Advisory Committee, and the chairmen of the County School Boards Associations. Ex officio members should include a representative from the State Department of Vocational Education and the county superintendents of the adjacent counties.

The role of the Board of Management would be to direct the planning, coordination, scheduling, funding, and evaluation of programs to be sponsored by the ROC System on the various high school and community college campuses.

A committee or a board is not usually capable of day-to-day administration. There must be one person who has responsibility on a continuing basis for program administration. For this reason MERI recommends that the ROC System employ a highly qualified director/supervisor or executive director on a full-time basis. The executive director should

Figure 4

RECOMMENDED ORGANIZATION PATTERN OF ROC SYSTEM



NOTE: MERI recommends that ROC program teachers be under the administration of the local district for all except program supervision and direction. MERI recommends that these latter functions be fulfilled by the ROC System Director/Supervisor.

1/ The determination of which county superintendent is to serve as Chairman, and his length of service, is to be determined by the Board of Management.

be accountable to the Board of Management and should be responsible for the management of the System, the administration of the programs, and liaison with participating schools, agencies, and industries.

The chairman of the Board of Management should not act as an administrator of the ROC System. His primary function should be to convene the Board of Management, as necessary, in order to establish policies used to direct the activities of the executive director and to establish the necessary tax levy to operate the ROC System. The county superintendent of schools, acting as chairman, should also be responsible for certifying the expenditures approved by the Board of Management.

Financial support for the ROC System operation should be derived by levying appropriate ROC taxes on the participating districts, as authorized under Section 7450 and related following sections of the Education Code. MERI recommends that a countywide tax base be established in each county so that all students in each county may have an equal educational opportunity; however, the ROC System could be operated under existing law with only those districts that resolve to participate being taxed to support the program. Districts not choosing to participate formally might elect to send students to the ROC programs on the payment of appropriate tuition by the district. ROC program operational and capital costs would be borne by the ROC System.

Community Participation

Occupational education in the area desperately needs the guidance and support which can only come from business and community leaders who can represent the world of work and its needs. MERI recommends that an ROC Regional Advisory Committee be formed to advise the Board of Management about general community attitudes, needs, and major trends. Recommended membership for this committee is found on Figure 4.

To assist in the development of cluster skills programs, MERI recommends the appointment of two-county occupational family advisory committees for each of the occupational families. Such committees would work

with the ROC executive director and the occupational education teachers in the development of curricula, course materials, on-the-job or work experience training opportunities, and job placement. The chairman of each committee would serve on the Regional Advisory Committee.

ROC Activities

MERI recommends that the Board of Management initiate two kinds of major ROC activities. One is operational. The ROC System should complete its organizational and early planning phase during the current school year so that it can begin actual program operation in September 1969. In addition to the decentralized program operated on the various sites, MERI recommends that the ROC System operate certain centralized programs--mobile units to carry special programs to the various schools, a regional occupational guidance fair, and special in-service training service for local staffs who are reorganizing occupational curricula.

The other major activity is supportive. Much needed in the region is an information system which collects, processes, and distributes information to counseling and guidance personnel, administrators, occupational education teachers, and certain community groups. Such information should assist the Board of Management in making wise decisions regarding program initiation and phase-out, and program allocation to the appropriate site for highest and best use. It should assist local staffs and students in keeping abreast of world-of-work trends, and it should provide an excellent base for securing and measuring community support. At the very least, the information system should maintain a longitudinal student follow-up, and an updated manpower survey.

As part of the support mechanisms for the various ROC classes, three special committees are needed:

1. A permanent committee of all work experience coordinators in the region to coordinate the further development of such programs and to develop additional training slots in the job market.

2. A permanent committee to develop appropriate articulation between the pre-technical and the technical programs, and between the junior college and the high school programs.

3. An ad hoc committee to study the impact of Senate Bill 1, the Miller Education Act of 1968, on reorganizing the entire high school curriculum related to block scheduling and occupational education, and to relate the total curriculum to student learning experiences to the world of work.

VII THE RECOMMENDED OCCUPATIONAL EDUCATION PROGRAMS

General Programs

The process of occupational education is viewed very broadly in these recommendations. Curriculum recommendations would be incomplete if they would be limited only to programs related to specific occupations or occupational families. Students must not only be prepared for a job, but they must also be prepared for the world of work. This need was stressed continually by employers interviewed in Tulare/Kings counties.

For this reason some of the most important program recommendations relate to preparing the student to choose a career, to find and keep a job, and to understand the value of his work. The programs recommended are:

- Work Experience
- Occupational Counseling and Guidance
- Occupational Communication Skills (verbal, written, and mathematical)
- Getting and Keeping a Job
- Economics of Work

Work Experience. Work experience should be expanded to the maximum extent possible. In all programs students will gain more from their classroom experience if they are able to use the skills and knowledge learned in a work situation. Further, work experience gives the student a chance to learn first hand about the requirements of the world of work.

To develop maximum potential from the work experience programs, it is recommended that all activities in this area be coordinated by a single person or by a coordinators' committee for the two-county area. Instructors should still be encouraged to develop work experience stations and to work closely with the employers on student progress evaluation. However, the primary responsibility for developing work experience

stations and the responsibility for allocating them to programs would be that of the coordinator.

Occupational Counseling and Guidance. Young people need and want more and better opportunities to learn what types of jobs are available, what the jobs require, and what their qualifications and interests are. This type of motivation process cannot take place through a one-semester course in occupations, nor can it all be done in the senior year in high school.

An areawide articulated program of occupational guidance services is recommended to be commenced in the 7th grade and to run through the 12th grade. Because few districts have the resources to develop such a program on their own, it is suggested that the program be developed centrally and offered to the local districts as a service of the ROC System.

The program should also be developed so that it can be made available to adults who are interested in upgrading themselves through skill training.

Occupational Communication Skills. The ROC System needs to utilize every resource to provide for the upgrading of basic communication skills. A statement that the responsibility rests with the primary schools is not responsive to the problem. Employers are unable to find qualified workers who can "read, write, and add." The entire ROC System must bend to correct this deficiency. Communication skills should be offered as part of each program, and special training should be given to those students needing extra remedial work.

Additionally, the ROC System should work closely with the primary and secondary schools to help them understand student needs in this area and to offer special curriculum help if it is desired. While the ROC System cannot assume prime responsibility for providing education which is properly the domain of the basic educational process, it cannot afford to pass up opportunities to help improve basic education through close coordination and cooperation with other components of the school system.

Getting and Keeping a Job. This program integrates very closely with both the work experience and the occupational counseling and guidance programs. In fact, it might be planned as a unit of the latter; however, it is important enough to be set aside as a special program for discussion purposes.

Preferably, each high school should offer a short course in how to apply for and keep a job. When possible, this should be integrated with the skill training offered and should be directed to the special requirements of that occupation. Also, when possible, the training should include actual experience in applying for a job.

Economics of Work. One of the key complaints of employers interviewed was that young people did not understand the practical economics of the competitive system and how earnings are related to productivity. The subject matter appears to be a legitimate concern of occupational education, and, for that reason, it is suggested that programs be initiated at all high schools to provide training of this type at the junior and senior levels.

Specific Programs

MERI has recommended a number of specific programs which should be made more readily available to students in the region. These are presented in Table 4 at the end of this chapter. The exact location of such programs on any given high school site is appropriately a problem for the Board of Management after district participation is secured.

The most important underlying assumptions regarding these recommended programs are:

- The educators, employers, and students of this area sincerely wish to upgrade occupational education programs at the secondary level, both quantitatively and qualitatively.
- To make significant improvements in occupational education, all concerned are desirous of working cooperatively to find

new ways in which resources can be pooled to better serve the students at costs within the means of the taxpayers.

- Innovation and flexibility are essential components of the plan. New ways of accomplishing goals can be found, and the system can change to meet changing requirements.
- Because students have widely varying needs and abilities and because large numbers have not reached a high level of occupational sophistication, a large degree of transferability, both vertically and horizontally, must be provided to allow for maturing ideas and for changing goals.
- The labor market in which Tulare/Kings area students will be employed is far broader than the two-county area. Preparation for jobs not available locally is not only a legitimate but also a necessary part of the program.

The basic organization of Table 4 and the suggested basic approach to curriculum planning is through occupational families. An occupational family is a group of related occupations that involve similar skills and knowledge and a high degree of transferability of student interest. Planning occupational curricula in families permits maximum flexibility for students to move from one program to another in terms of both interest and of transferable knowledge and skills. Those families suggested for inclusion in the Tulare/Kings area ROC System include:

Agriculture and Related Occupations
Applied and Graphic Arts
Business
Construction
Engineering and Related Occupations
Health Occupations
Mechanical and Repair Occupations
Manufacturing and Processing Occupations
Personal Service Occupations
Special Programs

Vertical articulation, particularly from the 10th through the 14th grades, is a necessary part of some program recommendations. In others, the complete program is suggested only for the secondary level. In these situations there may be no related programs at the junior colleges, and consequently this training may not be available to persons who did not take it in high school. Wherever community need so indicates, the facilities of the ROC System should be available for adult education programs, both day and evening.

Concomitant with the recommendations is one that the facilities and staff also be made available to offer short-term programs to meet special needs of the community. For example, if a local employer (either existing or anticipated) needs special skills training, the ROC System should be able to provide training to persons selected by the Department of Employment. In effect, this is a local extension of MDTA (Manpower and Development Training Act) type programs.

The term "pre-technology" is intended to describe the type of program envisioned under the "Richmond Plan" where the student learns the basics of a complex occupational program at the secondary level and then learns the more sophisticated or specialized skills at the junior college level. The key part of the concept is that the program is planned progressively over the whole time span.

This concept does <u>not</u> necessarily mean that the entire program must be completed prior to employability. In some programs this may be true, but in most programs students will learn usable skills throughout the program and will be employable in less demanding positions prior to completion.

At the same time, advanced placement opportunities should be provided in such programs. Not all students learn at the same rate, and those who are highly motivated and who have learned well should be permitted to move into the junior college part of the program in the 12th grade.

Table 4

RECOMMENDED OCCUPATIONAL EDUCATION PROGRAMS

Programs	Number of Existing Programs in High Schools	Number of Recommended Programs	Reasons for Program Recommendations	Explanation of Inauguration, Continuation, Expansion, Reduction, or Elimination of Programs
A. Agricultural and Related				
1. General Agriculture and FFA-Related Programs	13			<u>Continue</u> in each high school where enrollments, facilities, and staff make it feasible. This program provides sound general education. Present programs are not generally considered vocational in nature and should be continued as general education programs.
2. Agricultural Technology, including Forestry	0	5	Need for programs based on: 1. Employer requests for more and better trained agricultural mechanics and irrigation technicians (Tulare and Hanford). 2. Junior college request for better preparation and articulation of high school students for existing program. 3 Agricultural employment trends in San Joaquin Valley and state as reported by California Department of Employment.	<u>Inaugurate</u> at up to 5 locations as part of ROC System. Should be 4-year program essentially beginning in 11th grade, but open to carefully selected 10th graders. Second and third year of program should be at junior college. If student enters program in 10th grade, then for last 2 years he would attend junior college.
3. Forestry/ Conservation	1		Program for forestry aid should be developed at junior college. Could be one of specializations of agricultural technology program. High school pre-tech would prepare for j.c. program.	<u>Elimination</u> of program as vocational at high school level. Advanced placement of selected high school students in j.c. program. See Agricultural Technology.
4. Ornamental Horticulture	8	3	Reduction is based on limited employment opportunities in local communities	<u>Reduction</u> of the number of programs is suggested over the next several years. Concentration of programs as part of ROC System.
B. Applied and Graphic Arts				
1. Printing and Lithography	1	1	Development of printing industry in Tulare/Kings Counties. Request by local employers for trained personnel. Los Angeles area is the printing center of the West. Although not shortage occupations, there are many opportunities. Local employers willing to assist in setting up program.	One 2-year program to be offered to 11th, 12th, 13th, and 14th grades. Students may enter at 11th, 12th, or 13th grades. Inaugurate program in one facility only at COS. High school juniors and seniors use one-half day and junior college students use one-half day. Guaranteed high school enrollment to be divided in proportionate share by districts. Program must involve modern equipment and processes.

Table 4 (continued)

Programs	Number of Existing Programs in High Schools	Number of Recommended Programs	Reasons for Program Recommendations	Explanation of Inauguration, Continuation, Expansion, Reduction, or Elimination of Programs
C. Business				
1. General Clerical		17	There are and will continue to be opportunities for well trained diversified office help, particularly in small offices where a wide range of skills is required. Local employers indicated high schools and junior colleges are doing a good job in this area now. But, it is not intended that this program be primarily occupational.	General education program only. Although it has vocational orientation, primary value is general preparation for business world. Expand program to include in all high schools. Three-year program should be available to all high school students; 2-year program at junior college. Not a vertically articulated program except that high school training would be good background for specialized programs in business at junior college.
2. Secretarial, General	12	5	Continuing statewide demand for well trained secretaries. Local employers indicate present training good. Employment possibilities for 18-year-olds.	Offer program at each high school and at junior college. Three-year, nonarticulated program. Students can complete in 12th, 13th, or 14th grade. Preparation for specialization as medical or legal secretary.
2a. Secretarial, Medical	0		Labor market statewide shows continuing shortage of well qualified medical secretaries.	Junior college program only. Specialization at 14th grade level, but high school students who have completed 3 years general secretarial may take in 13th grade.
2b. Secretarial, Legal	0		Labor market statewide shows continuing shortage of well qualified legal secretaries.	Junior college program only. Specialization at 14th grade level, but high school students who have completed 3 years general secretarial may take in 13th grade.
3. Merchandising	3	5	Shortage of adequately trained people in local area. Jobs available statewide for both full-time and part-time, and regular and interim employment. Continued expansion of retail activity anticipated commensurate with population growth. Note: Current surpluses of workers in local area are of marginally qualified people and housewives who want part-time employment.	Prepare students for either full-time or part-time jobs as sales clerk in a variety of types of stores. Program should involve work experience coordinated on countywide basis by one person. Offer at 5 SUBs[1/] and at junior college. Programs nonarticulated. Two years may be completed in 11th, 12th, 13th, or 14th grade. Also students may wish to take only one or two courses to prepare for interim employment.
4. Data Processing	0	1	Statewide and national labor market shortage of well qualified operators and programmers. Junior college program needs students prepared for more advanced training. Although limited number of jobs available locally, there are excellent opportunities for young people willing to leave the area.	Pre-tech program at high school level for 2 years. Technical program at junior college level for 2 years. Vertical articulation. Should involve some hands-on experience in senior year on sophisticated equipment which could be obtained at the junior college.

1/ SUB = Sub-system.

Table 4 (continued)

Programs	Number of Existing Programs in High Schools	Number of Recommended Programs	Reasons for Program Recommendations	Explanation of Inauguration, Continuation, Expansion, Reduction, or Elimination of Programs
5. Bookkeeping/ Accounting	1/	5	Statewide continuing demand for full-charge bookkeepers warrants program. In local area very little accounting has been put on data processing. Small offices will continue to require fully trained bookkeepers, especially as business record keeping becomes more complex.	Does not replace basic bookkeeping offered at each high school as part of general clerical program. This is a more advanced program, a specialization. Program should involve work experience. Program will be both terminal at 12th grade and pre-tech for admission to advanced program at junior college. Some advanced placement of 12th graders may take place.
D. Construction Occupations				
1. Construction Technology	0	1	Demand is not great either locally or elsewhere in the state except for electricians. There are sufficient openings, however, for well qualified craftsmen to warrant another program. Building activity is expected to increase over the next several years and it is probable that demand for construction craftsmen will also increase. One of the greatest needs of the industry will be for broadly trained craftsmen who are adaptable enough to meet the rapidly changing requirements of the trade created by new materials and new processes.	This program is basically pre-apprentice training in the various construction trades including carpentry, electrical, plumbing, masonry, drywall, sheetmetal, and mill-cabinet. A 3-year program with the last year spent building a structure. The first year could be a regular woodshop course expanded to include an introduction to some of the other trades. Some specialization may take place during the third year. This is essentially the same program as offered by COS. There should be a similar program at the high school level for students who want to go to work in the construction industry immediately on graduation from high school.
E. Engineering and Related				
1. Engineering Technician			Local labor market need limited, but statewide and nationwide needs are great, particularly in electronics field. Growth of need for engineering technicians expected to accelerate. This is an occupational area with many new and emerging occupations.	Programs directed to the true engineering assistant. Emphasis on theory, math, and drawing. A pre-tech program at the high school level. Because of the complexity of these areas, the programs should be considered 4-year programs, articulated from the 10th through the 14th grade. Advanced placement of 12th graders in junior college program should be permitted. Specialization to take place only in 3rd and 4th year of program. Note natural crossover between this program and college transfer programs or mechanical repair programs.
Civil	0	1		
Mechanical	0	1		
Electronic	0	1		
2. Draftsman, Mechanical and Architectural	16	5	Local labor market has limited need for draftsmen but there is a continuing need statewide and nationally. Although the number of programs is reduced, the number of qualified draftsman graduates should increase. Current programs can continue as part of general mechanics program.	Three-year program offered at 5 SUBs and at junior college. No vertical articulation needed. First year can be given at local high school. Programs should be upgraded and centralized in SUBs. Basic mechanical drawing and blueprint reading should remain in other programs at local high schools.

1/ Advanced programs of the type contemplated may exist in a few schools, but if so they should be put into the ROC System so as to be available to all students.

Table 4 (continued)

Programs	Number of Existing Programs in High Schools	Number of Recommended Programs	Reasons for Program Recommendations	Explanation of Inauguration, Continuation, Expansion, Reduction, or Elimination of Programs
F. Health Occupations				
1. Registered Nurse	0		Critical shortages locally, statewide, and nationally.	Age and other requirements make these programs appropriate only at the junior college level. In some programs advanced placement of highly motivated, more mature students should be permitted. One health education center should be established at the junior college to offer all health related instruction. Would offer greater opportunities for shared facilities, equipment, and instructional staff. Would also facilitate coordination of use of clinical facilities where this is a consideration. Satellite programs for Nurse's Aide could be offered through ROC System to high school seniors.
2. Licensed Vocational Nurse	0		Critical shortages locally, statewide, and nationally.	
3. Medical Lab Technologist	0		Critical shortages locally, statewide, and nationally.	
4. X-Ray Technician	0		Continuing shortages.	
5. Dental Assistant	0		Shortage less acute but high turnover offers many opportunities.	
6. Medical Assistant	0		Shortage less acute but high turnover offers many opportunities.	
7. Nurse's Aide	0		Need varies. PROTEUS has found continuing need lately, especially in nursing homes and convalescent hospitals. Should be offered on an as-needed basis.	
G. Mechanical and Repair Occupations				
1. General Mechanics	0	17		A general education program designed to acquaint students with principles of internal combustion engines, power transmission, electrical motors, metals and machining, and hydraulics. Not intended to be a vocational program but would be pre-vocational in the sense that it would give basic knowledges and skills required in all programs offered in the occupational families of mechanical and repair occupations and metals processing occupations. This program should be offered at each high school and should provide opportunities for transfer into the ROC vocational programs in these families. Students may also complete the general mechanics course and enroll in specialized programs at the junior college or enter apprenticeship programs.

Table 4 (continued)

Programs	Number of Existing Programs in High Schools	Number of Recommended Programs	Reasons for Program Recommendations	Explanation of Inauguration, Continuation, Expansion, Reduction, or Elimination of Programs
2. Auto Mechanics	14	5	Continuing opportunities for well trained mechanics throughout state, especially for mechanics capable of repairing more sophisticated components, i.e., air conditioning systems, etc. Local labor market does not indicate need for training now for service station attendants; however, program should be sufficiently flexible so that this and similar specialized courses can be offered when the Department of Employment indicates a need. This training will prepare for a wide range of jobs, not just auto mechanics. Local employers expressed need for diesel and heavy equipment mechanics.	The true vocational course to be concentrated in 5 SUBs. Three-year program. Can be pre-tech at one or two schools for specialized programs at junior college in specialized systems, diesel mechanics, heavy equipment repair, etc. Note: Short courses for related jobs, e.g., service station attendant, can be set up as needed.
3. Body and Fender Repairman	0	2	Continuing statewide shortage of qualified persons. Local opportunities limited but San Joaquin Valley has many opportunities.	Two-year program to follow Auto Mechanics. Offer at 2 SUBs to serve entire 2-county area. One of 2 programs could be at junior college. Program basically pre-apprentice for those seriously interested in this work as a career. Applicability of training to other occupations very limited.
4. Electro-Mechanical Equipment Repairman	4	5	Continuing statewide demand for qualified mechanics in all specialty areas. An especial shortage exists for repairmen of color television sets. Local demand not high at present but will grow, particularly in home appliance repair.	These programs are not proposed for the junior colleges, although they might be offered there. Sufficient competency can be obtained in a well planned 3-year secondary program. Basic first year program at each SUB with the following specialized 2-year programs to be offered at one SUB each: vending machines office equipment radio and television (3 years total) home appliances (including air conditioners)
5. Air Conditioning and Refrigeration Mechanic	0	2	Local demand is limited but growing with the expansion of more sophisticated manufacturing in the area. Valley and statewide manufacturers report continuing shortages of well qualified technicians.	Emphasis is on commercial and industrial air conditioning and on electro-mechanical maintenance, particularly automated control equipment. A 4-year program with pre-technology at a SUB and the last two years at the junior college. The secondary level pre-tech program could prepare for apprenticeship as a maintenance mechanic. The junior college part might offer specialization in such subjects as: automated controls commercial refrigeration

Table 4 (continued

Programs	Number of Existing Programs in High Schools	Number of Recommended Programs	Reasons for Program Recommendations	Explanation of Inauguration, Continuation, Expansion, Reduction, or Elimination of Programs
Manufacturing and Processing				
1. Machinist	3	3	Local employers report continuing shortages of qualified all-around machinists. The same shortage exists statewide and, in fact, machine operators are scarce in some locations.	A 3-year program terminal at the 12th grade preparing a student to enter a machinist apprenticeship. Stress training as an all-around machinist. These programs would be basically duplication of those at the junior college.
2. Welding	4	5	Combination welders are in short supply statewide. Local employers report shortages of well qualified persons and an abundance of marginally qualified persons.	Program to be terminal at 12th grade with qualified students receiving a certificate upon satisfactory completion. Welding should continue to be a part of other programs such as general mechanics and basic agriculture. Existing programs need to be upgraded so that welding certificates can be issued on completion.
I. Personal Service Occupations				
1. Police Science	0		Continuing shortages and large need for in-service training.	Offer at junior college only.
2. Cook-Chef	0	1	Statewide opportunities are good, especially for dinner cooks and chefs. Local demand will increase with growth of recreation and tourism.	One SUB should be given prime responsibility for all programs related to the hotel-restaurant industry. Programs can be expanded as needed.
3. Waiter-Waitress	0	1	Need varies but is expected to increase. (See above.)	Short-term programs as needed.
4. Teacher Aide	0		Need growing with increased use of teacher aides both locally and statewide.	Offer at junior college only. Two-year program. Can prepare for j.c. program at secondary level.
5. Nursery School Aide	0		Continuing need statewide and will grow in the future.	Offer at junior college only. Two-year program. Can prepare for j.c. program at secondary level.
J. Special Programs				
1. Work Experience	7	17	Employers report willingness to cooperate and value of programs.	Offer through each SUB but coordinate centrally. Offer in all programs.
2. Counseling and Guidance	0	17	Students report desire for more and better occupational guidance. Former students express need for better occupational guidance.	Program to be developed and encouraged through SUB but given in all grade 7-12 classes.

Table 4 (continued)

Programs	Number of Existing Programs in High Schools	Number of Recommended Programs	Reasons for Program Recommendations	Explanation of Inauguration, Continuation, Expansion, Reduction, or Elimination of Programs
3. Occupational Communications Skills	0	17	Employers report critical needs.	To be offered wherever and however it can be arranged to the maximum extent possible in all vocational and general education programs.
4. How to Get and Keep a Job	0	17	Employers and students report serious needs.	Part of both programs No. 1 and 2.
5. Economics of Work	0	17	Employers report critical needs.	Basic part of all occupational programs. Especially included in No. 2 and 4.

Appendix A

SUMMARY OF VOCATIONAL/OCCUPATIONAL COURSES OFFERED IN HIGH SCHOOLS, TULARE/KINGS COUNTIES
Spring 1968

Table A-1

SUMMARY OF VOCATIONAL/OCCUPATIONAL COURSES OFFERED IN HIGH SCHOOLS, TULARE/KINGS COUNTIES Spring 1968

Programs and Courses	Tulare County High Schools													Total Programs Tulare County	Kings County High Schools				Total Programs Kings County	Combined Total Tulare/Kings Counties
	Alpaugh	Dinuba	Exeter	Lindsay	Orosi	Monache	Porterville	Mt. Whitney	Redwood	Strathmore	Tulare Union	Tulare Western	Woodlake		Corcoran	Hanford	Avenal	Lemoore		
AGRICULTURE & RELATED																				
Agriculture, General			X		X	X	X		X	X	(X)			7		X		X	2	9
Agricultural Mech.		X	X	X	X	X	X	X	X				X	9		X			1	10
Agricultural Science		X		X		X	X	X				X	X	7		X		X	2	9
Animal Science		X	X		X									3		X		X	2	5
Plant Science			X		X									2		X		X	2	4
Farm/Ranch Management														-		X		X	2	2
Forestry														-		X			1	1
Ornamental Horticulture			X	X	X		X	X		X				6		X		X	2	8
Agri-Business			X			X	X							3					-	3
Agricultural Farm Shop			X		X								X	3		X		X	2	5
BUSINESS EDUCATION																				
General Business	X	X	X	X	X		X	X	X		X	X	X	11	X	X	X	X	4	15
Bookkeeping	X	X	X		X	X	X	X	X	X	X	X	X	12	X	X	X	X	4	16
Business English		X				X	X	X	X					5			X		1	6
Business Law/Economics					X	X	X				X	X		5	X			X	2	7
Business/Shop Math		X	X			X	X	X	X		X			7	X				1	8
Clerical, Office Practice		X	X		X	X	X	X	X	X	X	X		10	X	X	X	X	4	14
Office Machines		X		X	X		X	X			X	X	X	8		X			1	9
Record Keeping			X						X					2					-	2
Secretarial Training											X	X		2					-	2
Shorthand		X	X		X		X	X	X	X	X	X	X	10	X	X	X	X	4	14
Typing (Business)	X	X	X	X	X	X	X	X	X	X	X	X	X	13	X	X	X	X	4	17
Distributive Education								X						1		X			1	2
Work Experience/Cooperatives		X					X	X			X	X		5		X	X		2	7

Table A-1 (continued)

Programs and Courses	Tulare County High Schools													Total Programs Tulare County	Kings County High Schools				Total Programs Kings County	Combined Total Tulare/ Kings Counties
	Alpaugh	Dinuba	Exeter	Lindsay	Orosi	Monache	Porterville	Mt. Whitney	Redwood	Strathmore	Tulare Union	Tulare Western	Woodlake		Corcoran	Hanford	Avenal	Lemoore		
HOME ECONOMICS & FOOD SERVICES																				
Vocational Home Economics							X							1					-	1
Boys' Foods (Chef's Training)			X											1		X			1	2
Homemaking	X	X	X	X	X	X	X	X	X	X	X	X	X	13	X	X	X	X	4	17
INDUSTRIAL ARTS, VOCATIONAL SHOPS, AND RELATED COURSES																				
Auto Shop		X	X			X	X	X		X	X	(X)	X	9	X	X	X	X	4	13
Vocational Auto Shop										X				2					-	2
Auto Electricity												X		1					-	1
Cabinet Making							X							1					-	1
Carpentry							X							2					-	2
Electricity			X			X	X	X	X		X			6				X	1	7
Electronics							X		X					2		X			1	3
General Shop			X		X			X	X		X	X		6		X		X	2	8
Machine Shop		X					X			X				3					-	3
Metal Shop	X	X			X				X			X		5					-	5
General Mechanics					X								X	2					-	2
Welding					X		X						X	3		X			1	4
Woodshop		X	X	X	X	X	X	X	X	X	X	X	X	12	X	X	X	X	4	16
Mechanical Drawing		X	X	X	X	X	X	X	X	X	X	X	X	12	X	X	X	X	4	16
MISCELLANEOUS COURSES																				
Appliance Repair											X			1					-	1
Commercial/Graphic Arts		X			X									2					-	2
Photography		X												1					-	1
Printing		X												1					-	1
Aviation Science													X	1					-	1

Note: (X) Two schools in district share program facilities.

Source: Class schedules provided by each school listed.